



## Complete Summary

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### GUIDELINE TITLE

Acute rhinosinusitis in adults.

### BIBLIOGRAPHIC SOURCE(S)

University of Michigan Health System. UMHS rhinosinusitis guideline. Ann Arbor (MI): University of Michigan Health System; 1999 Dec. 7 p. [7 references]

## COMPLETE SUMMARY CONTENT

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

### CATEGORIES

IDENTIFYING INFORMATION AND AVAILABILITY

## SCOPE

### DISEASE/CONDITION(S)

Acute rhinosinusitis

### GUIDELINE CATEGORY

Diagnosis

Management

Treatment

### CLINICAL SPECIALTY

Family Practice

Internal Medicine

Otolaryngology

Pediatrics

### INTENDED USERS

Advanced Practice Nurses  
Nurses  
Physician Assistants  
Physicians

## GUIDELINE OBJECTIVE(S)

To improve quality of care and decrease costs by:

1. Accurate diagnosis
2. Appropriate medical therapy
3. Effective radiological imaging
4. Appropriate subspecialist referral.

## TARGET POPULATION

Non-immunocompromised adults with acute rhinosinusitis

## INTERVENTIONS AND PRACTICES CONSIDERED

1. Clinical diagnosis, based mainly on signs, symptoms, and the physician's overall clinical impression
2. Medical therapy
  - Antibiotics:
    - First line antibiotics: amoxicillin (Amoxil®, Polymox®) or trimethoprim/sulfamethoxazole (Bactrim-DS®, Septra-DS®)
    - Second line antibiotics: loracarbef (Lorabid®), clarithromycin (Biaxin®), cefuroxime axetil (Ceftin®), ciprofloxacin (Cipro®), amoxicillin/clavulanate potassium (Augmentin®), levofloxacin (Levaquin®)

Note: azithromycin is considered but not recommended.

- Adjuvant therapy likely to be effective in treating symptoms:
  - Oral decongestants: pseudoephedrine (Sudafed®)
  - Topical decongestants: oxymetazoline 0.05% (Afrin®)
  - Topical anticholinergics: Ipratropium 0.03 or 0.06% (Atrovent®)
  - Oral anticholinergics (first generation antihistamines): Brompheniramine (Dimetane®), chlorpheniramine (Chlor-Trimeton®), clemastine (Tavist®), diphenhydramine (Benadryl®)
- Adjuvant therapy possibly effective in treating symptoms:
  - Zinc gluconate lozenges
  - Vitamin C
  - Echinacea extract
  - Nasal corticosteroids
- Adjuvant therapy with no proven benefit in controlling symptoms:
  - Steam
  - Saline spray
  - Saline irrigation

- "Non-sedating" antihistamines
  - Guaifenesin (except possibly at high doses)
3. Surgery
  4. Diagnostic imaging:
    - Limited sinus computed tomography (CT)
    - Plain sinus x-rays are not recommended
  5. Otolaryngology consultation

## MAJOR OUTCOMES CONSIDERED

### Treatment

- Symptomatic improvement
- Bacteriologic cure rates

### Diagnosis

- Performance characteristics of signs and symptoms for rhinosinusitis including sensitivity, specificity, frequency and likelihood ratios.

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

#### Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The original literature search for the original guideline (1996) was conducted prospectively using the major keywords of "rhinosinusitis," "MRI," "CT," "radiographs," "medical therapy," "randomized controlled trials," "controlled trials," "observational trial," and "meta analysis." An updated search added publications from 1996 through December 1998. The search was a single cycle. All searches were performed using MEDLINE (U.S. National Library of Medicine).

### NUMBER OF SOURCE DOCUMENTS

Not stated

### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of evidence for the most significant recommendations:

- A. Randomized controlled trials
- B. Controlled trials, no randomization

- C. Observational trials
- D. Opinion of expert panel

## METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses  
Systematic Review

## DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

When possible, conclusions were based on prospective randomized clinical trials. In the absence of randomized clinical trials, observational studies were considered. If none were available, expert opinion was used.

## METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

University of Michigan Health System (UMHS) guidelines are reviewed by leadership in departments to which the content is most relevant. This guideline concerning acute rhinosinusitis in adults was reviewed by members of the following departments: Family Medicine; General Medicine; Otolaryngology; Pediatrics.

Guidelines are approved by the Primary Care Executive Committee (PCEC) and the Executive Committee of Clinical Affairs (ECCA).

# RECOMMENDATIONS

## MAJOR RECOMMENDATIONS

Note from National Guideline Clearinghouse (NGC): The following key points summarize the content of the guideline. Refer to the full text for additional information, including detailed information on best predictors of rhinosinusitis,

preferred treatment regimens, and dosing and cost considerations for first and second trial antibiotic treatments.

- Definitions.

Acute rhinosinusitis is inflammation of the paranasal sinuses and the nasal cavity lasting no longer than 4 weeks. It can range from acute viral rhinitis (the common cold) to acute bacterial rhinosinusitis. Many therapies are useful for the spectrum of viral to bacterial rhinosinusitis, but antibiotics are reserved for bacterial rhinosinusitis.

- Treatment.

Antibiotic treatment for a patient suspected of having acute bacterial rhinosinusitis is best decided by weighing potential benefits against risks. Benefits depend on the probability of bacterial rhinosinusitis and the severity of symptoms. Antibiotic therapy has not been shown to decrease complications or the rate of progression to chronic rhinosinusitis. [A\* {limited by power to detect outcomes}]. Risks of treating with antibiotics include severe allergic reaction, potential antibiotic side effects, and bacterial resistance.

- Trimethoprim/sulfamethoxazole and amoxicillin have been demonstrated to be superior to placebo in patients with acute rhinosinusitis [A\*]. Numerous antibiotics have been compared to these agents and none have been shown superior. Trimethoprim/sulfamethoxazole and amoxicillin therefore remain the agents of choice. The usual course of antibiotic treatment (10-14 days) may be extended to up to 21 days (or pending computed tomography [CT]) [D\*].
- Little data exist regarding ancillary therapies for acute rhinosinusitis. Some studies examining treatments for viral upper respiratory infections have shown:
  - Efficacy in symptom control: decongestants and anticholinergics, including  $\alpha$ -first-generation $\alpha$  antihistamines [A\*].
  - Possible efficacy: zinc gluconate lozenges, vitamin C, nasal corticosteroids, and Echinacea extract [conflicting or insufficient data].
  - No significant benefit: guaifenesin (except possibly at high dose), saline spray or irrigation, steam,  $\alpha$ -non-sedating $\alpha$  antihistamines.

- Follow-up.

If symptoms of rhinosinusitis persist for more than three weeks on antibiotics or recur more than three times per year, a limited sinus CT scan (coronal plane) should be performed while the patient is symptomatic to reassess diagnosis and determine need for referral [C, D\*]. A limited sinus CT (\$200) of a symptomatic patient provides adequate information compared to a full sinus CT scan/maxillofacial CT (\$801) and provides much better definition than a plain sinus x-ray series (\$204). Plain sinus x-rays are, therefore, not recommended.

## \*Definitions

Levels of evidence for the most significant recommendations:

- A. Randomized controlled trials
- B. Controlled trials, no randomization
- C. Decision analysis
- D. Opinion of expert panel

## CLINICAL ALGORITHM(S)

An algorithm is provided for the management of acute rhinosinusitis in adults.

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence is identified and graded for the most significant recommendations (see "Major Recommendations").

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

- Accurate diagnosis
- Adequate medical therapy: Antibiotic therapy is associated with resolution of symptoms in nearly 90% of cases. Selected antimicrobial agents produce a bacteriologic cure rate of nearly 85% for patients with rhinosinusitis.
- Effective radiological imaging: Compared to plain sinus x-rays, the limited sinus computed tomography (CT) yields a far superior definition of sinus pathology, sinus obstruction, and ostiomeatal complex disease. It is an excellent tool for identifying patients with acute rhinosinusitis and may help differentiate patients with rhinosinusitis from those with allergic rhinitis, atypical facial pain, and other problems.

Subgroups Most Likely to Benefit:

Predisposing conditions for acute rhinosinusitis include:

- Mechanical obstruction (polyps, septal deviation, tumor, trauma, foreign body)
- Mucosal edema (rhinitis: allergic, vasomotor, viral)
- Rapid change in altitude or pressure
- Impaired ciliary motility (Kartagener's syndrome, cystic fibrosis)
- Immunodeficiency (HIV, immunoglobulin deficiencies)

### POTENTIAL HARMS

- Risks of treating with antibiotics include severe allergic reaction, potential antibiotic side effects, and bacterial resistance.

- Topical decongestant agents should not be used more than 3 days because of risk of rebound vasodilation (rhinitis medicamentosa) or atrophic rhinitis.

Subgroups Most Likely to be Harmed:

- Although they have not been found to affect blood pressure significantly in patients with stable hypertension, oral decongestants should be used with caution in patients with hypertension, ischemic heart disease, glaucoma, prostatic hypertrophy, or diabetes mellitus.
- Geriatric patients may be more sensitive to the effects of oral decongestants.

## CONTRAINDICATIONS

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Oral decongestants are contraindicated with monoamine oxidase inhibitors (MAOIs) or having uncontrolled hypertension or severe coronary artery disease.

## QUALIFYING STATEMENTS

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These guidelines should not be construed as including all proper methods of care or excluding other acceptable methods of care reasonably directed to obtaining the same results. The ultimate judgement regarding any specific clinical procedure or treatment must be made by the physician in light of the circumstances presented by the patient.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

University of Michigan Health System. UMHS rhinosinusitis guideline. Ann Arbor (MI): University of Michigan Health System; 1999 Dec. 7 p. [7 references]

#### ADAPTATION

Not applicable: The guideline was not adapted from another source.

#### DATE RELEASED

1996 May (revised 1999 Dec)

#### GUIDELINE DEVELOPER(S)

University of Michigan Health System - Academic Institution

#### SOURCE(S) OF FUNDING

Internal funding for University of Michigan Health System (UMHS) guidelines is provided by the Office of Clinical Affairs. No external funds are used.

#### GUIDELINE COMMITTEE

Rhinosinusitis Guideline Team

#### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members: Daniel Dubay, MD; Jane McCort, MD; Richard Orlandi, MD; James Peggs, MD; Renée Stiles, PhD; Jeffrey Terrell, MD.

#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The University of Michigan Health System endorses the Guidelines of the Association of American Medical Colleges and the Standards of the Accreditation Council for Continuing Medical Education that the individuals who present educational activities disclose significant relationships with commercial companies whose products or services are discussed. Disclosure of a relationship is not intended to suggest bias in the information presented, but is made to provide readers with information that might be of potential importance to their evaluation of the information.

#### Team Members:

Richard Orlandi, MD Bayer Pharmaceuticals, Consultant

Daniel Dubay, MD (none)

Jane McCort, MD (none)

James Peggs, MD (none)



Renée Stiles, PhD (none)

Jeffrey Terrell, MD (none)

#### GUIDELINE STATUS

This is the current release of the guideline. It is an update of a previously issued guideline (Acute sinusitis in adults. Ann Arbor [MI]: University of Michigan Health System; 1996).

An update is not in progress at this time.

#### GUIDELINE AVAILABILITY

Electronic copies: Available for download (in Portable Document Format [PDF]) from the [University of Michigan Health System Web site](#). Continuing Medical Education (CME) information is [also available](#).

#### AVAILABILITY OF COMPANION DOCUMENTS

None available

#### PATIENT RESOURCES

None available

#### NGC STATUS

This summary was completed by ECRI on August 21, 2000. The information was verified by the guideline developer on November 22, 2000.

#### COPYRIGHT STATEMENT

This NGC summary is based on the original guideline, which is copyrighted by the University of Michigan Health System (UMHS).

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